Greater Louisville Inc.

Mr. Arthur L. Williams, Director
Louisville Metro Air Pollution Control District
850 Barret Avenue
Louisville, KY 40204

October 5, 2004

RE: Proposed STAR Regulations – Informal Review Period Comments/Questions

Greater Louisville Inc., the Metro Chamber of Commerce, appreciates the willingness of Mayor Abramson, his Community Development Cabinet, and the Air Pollution Control District (APCD) to give the business community the opportunity to participate in the development of the community's Strategic Toxic Air Reduction Program (STAR). GLI understands the vital importance of air quality to not only the public health, but to the economic health and vitality of the community. GLI believes that the long-term goal of improving our community's air will improve the quality of life and economic climate for all in our hometown.

Of course, since air quality issues are technical and interdependent, a balanced scientifically based approach to achieving this common goal is required. The STAR program encompasses changes in or adds 19 regulations, which is the largest regulatory package that APCD has put forward in twenty years. Consequently, the analysis of the STAR program will require time to review its effects on small and large employers in Louisville Metro. Ultimately, the goal is to develop a toxics regulatory package that embodies the health goals while balancing the economic costs to existing AND future employers.

With this in mind, GLI's Environmental Affairs Committee established an Air Toxics Taskforce comprising representatives from large and small businesses and technical experts from several environmental consulting firms. The mission of the Taskforce is to provide constructive comments and questions regarding the proposed program. GLI asked both Chamber members and nonmember businesses to participate. The STAR program has attracted much attention by the affected businesses.

On Thursday, September 9, 2004, Mayor Abramson articulated the principles of the STAR program. These principles are laudable, and in fact, essential to a balanced approach to air quality and economic development. These principles are for a program which:

- Targets and identifies chemicals of concern;
- Clearly identifies the sources of these chemicals of concern;

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- Sets realistic risk goals and emission limits; and
- Allows for a reasonable time frame to implement reductions.

In its initial review, the Taskforce believes that the details of the draft regulation do not achieve the Mayor's principles. In this initial review, under the very short time period we have had, we believe that these are some of the areas of dissonance between the Mayor's objectives and the actual result:

- Does Not Target the Chemicals of Concern – APCD completed an extensive monitoring effort that identified 18 chemicals of concern in Louisville. These are the chemicals identified as posing an unacceptable risk as one of more of the monitoring stations located in Louisville Metro. The current informal draft regulations go far beyond the original scope of the toxics concern.
    - The informal draft regulations expand the list of 18-targeted chemicals of concern from the West Jefferson County Risk Assessment listed as above EPA's risk guidelines to 191 chemicals or compound categories without peer review or a scientifically based justification. Additionally, it should be understood that the compound categories listed further expands the scope and impact of the informal draft regulations to thousands of chemicals.

- Does Not Clearly Identify the Sources of the Problem Chemicals – The current informal draft regulations are premature in that an analysis of the sources (stationary, mobile, area, and non-road mobile) of the chemicals of concern has not been accomplished to determine where best to spend limited resources to effectuate the greatest health benefit.
    - Mobile sources are not included in the program even though this source sector is a major contributing factor to the toxics issue in Louisville Metro.
        - *USEPA Region 4 Air Toxics Relative Risk Screening Analysis* (September 27, 2002) which the APCD has stated is the primary source for identifying the Category 1A Toxics Air Contaminants (TACs) in the informal draft regulation indicated the following:
            - Cancer risk from background sources – 29%
            - Cancer risk from area, on road & off road mobile – 66.9%
            - Cancer risk from stationary sources – 6.1%
            - The draft informal regulations focus on only major stationary sources and ignore the source of 93.9% of the cancer risk and 84% of the non-cancer risk.
            - Charts of some of the chemicals of concern and percent from each source sector in Kentucky are attached.

- Evidenced through the readings of some of the chemicals of concern at Otter Creek Park and U of L Shelby Campus above the EPA risk goals. (West Jefferson County Risk Assessment)
- Other cities including Cleveland and Philadelphia have incorporated toxics programs but also include mobile source components as vital to the success to the programs.

- Does Not Set Realistic Risk Goals/Emission Limits – Utilizing the EPA risk goal of $1x10^{-6}$ (1 in a million cancer incidents) as a goal while also allowing for flexibility if a business employs a best available control technology if the goal cannot be met is reasonable. However, the program should also follow the same rationale for the non-cancer risk (i.e. hazard quotient (HQ)). The informal draft regulations propose a HQ of .2 instead of the EPA goal of 1.0 (5 times more stringent). (Regulation 5.21, Section 2.0) There is no rationale for the lower limit.
    - Additionally, the informal draft Regulation 5.21 as written could never be met. The table in Section 2.8.2 would require all sources of any cancer causing toxic air contaminants to cease operation, as the standard of 10x10-6 would always be exceeded. This unachievable outcome must be addressed.

- Reasonable Time Frame To Implement Reductions – The taskforce believes that the program does allow for a reasonable time frame to implement reductions if needed.

- Other Potential Consequences/Concerns
    - The current program affects all existing businesses that need to modify their operation, and affects all companies wanting to expand or locate in Louisville (Regulation 5.21 Section 2.1). This is much greater than the 173 companies that would have to pay the additional fees the APCD has initially identified.
        - Any process change, including a change in material, to an existing business subjects the company to the informal draft regulations.
        - Broadens the definition of modification to include many more process changes than the current Commonwealth of Kentucky toxics program, which is triggered when a USEPA defined modification is made.
        - Companies looking to locate in Louisville will weigh the excess costs due to the bureaucratic excesses that the informal draft regulations would cause.

- The malfunctions and leak detection regulations apply to all existing companies in Louisville Metro, not just the 173 companies identified through the informal draft regulations. (Regulation 1.07)
- For a regulatory package of this size, it is recommended that a regulatory impact analysis be completed pursuant to Kentucky Revised Statutes Chapter 77 to allow the community to fully weigh both the health benefits and economic and community costs. Without an analysis of the public health benefits and community costs, the community will not have the certainty to know that the benefits out weigh the costs.
- Businesses will expand or locate in other surrounding counties rather than incurring the costs of the bureaucratic process required by the informal draft regulations. This could lead to increased toxics emissions from mobile sources and increased sprawl.
- Small Business Concerns –
    - The current program requires additional emissions reporting, data, and possibly modeling from 130 small businesses, and additional reporting from another approximately 450 minor or small companies including gas stations and dry cleaners. This requirement will place a large financial burden on small business to hire a consultant to report the emissions data and perform the modeling required and possibly place monitoring equipment at their business to comply.
    - Consequence - Small companies, the backbone of this community, are normally not equipped and are financially constrained to handle this additional burden.
    - Many of the smaller companies included in the program want a listed de minimis standard for each chemical be included in the regulation to allow an "exit" ramp for the small companies that are at or below the de minimis standard for the chemicals without having to provide more emissions data and modeling.
- Businesses either wanting to locate or expand in Louisville Metro are having a difficult time obtaining construction permits in a reasonable time for emission control measures they are including at their business. A new bureaucratic process is only going to exasperate this problem.

GLI's Air Toxics Taskforce has brought forward these concerns and potential consequences in good faith to provide constructive comments to this program. GLI and its members understand the importance of the STAR program and want to fully understand its impacts and support its ultimate objective. To adequately review the informal draft regulations will require more time by any

interested parties. GLI respectfully requests the Mayor and APCD Board to institute a stakeholder's workgroup to fully review and discuss the impacts and benefits of this program. USEPA even recommends such a process in response to its *Region 4 Air Toxics Relative Risk Screening Analysis* (September 27, 2002).

In addition, the business community requests that a complete regulatory impact analysis as required by Kentucky Revised Statutes Chapter 77 be completed prior to the start of the formal comment period. GLI stands ready to assist in this effort.

Attached are comments and questions from the Air Toxics Task Force for your consideration. The comments and questions illustrate a first glance at the draft informal regulations and are representative of the members' concerns. After your staff has had an opportunity to review and address the questions and concerns, the Air Toxics Task Force looks forward to providing more in depth recommendations for the development of a balanced community air toxics program.

Respectfully submitted,

Patrick Moran

Patrick Moran, Esq.
Chair, GLI Air Toxics Taskforce

Cc: Hon. Jerry Abramson
Mr. Bruce Traughber
Hon. Kelly Downard
Dr. Karen Cassidy
APCD Board Members

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Environmental Affairs Committee
Comments on
STAR Program

Regulation 1.02

Regulation 1.02 - Definitions

► Section 1.6 Definition of Ambient Air is revised to define air inside secured plant boundaries as ambient air not at the business property line. As proposed, risk levels will be applied inside plant boundaries even though there is no access by the general public, thus greatly increasing chance risk standards will be exceeded and trigger unnecessary controls. Based on preliminary analysis, it is estimated that use of the proposed definition rather than the current USEPA definition can result in BAC numbers three times more stringent. Including areas not open to the general public is not necessary since workers at those properties are protected by OSHA standards. What is reasoning of revising ambient air definition?

► Section 1.37 Definition of Malfunction redefines malfunction to include failure of equipment "that may result in emissions that exceed an applicable emission standard". If TAC regs are implemented, numerous additional emissions standards will be created. In addition, the change implies (defines?) changes in emissions that could be above an emission standard as a malfunction, thus triggering numerous additional unnecessary reporting events. The volume of reporting and documentation required in this regulation would cause a great burden on the facilities to maintain and the LMAPCD to review. Some of it is duplicative and unnecessary. The time frame allowed to submit reports is extremely short and in some situations may be unachievable depending on the severity of the malfunction or emergency. How is APCD going to determine which abnormalities or malfunctions would be defined under an incident that "may result in emissions that exceed?"

► Section 1.56.6 Definition of Process adds "Use of a material" in definition, which means any change in any material used at a facility will be considered a modification under LMAPCD rules in the SIP and also for the TAC regs. Will bring in a change of MSDS by vendor officially as a modification under the SIP, and elimination of such changes to qualify as minor Title V and FEDOOP permit changes. Is this the intent of the APCD to increase the scope of the regulations to include such issues as process and subject them to TAC regs? Additionally, this regulation no longer recognizes "emergencies". What is the reasoning for the removal of all language referring to "emergencies"?

► Section 1.70 Definition of TACs defines many more TACs than required. Instead of only the 18 chemicals of concern of the community, it adds 20 more TACs without

justification, and a total of 191 when any facility (not just the 173 Title V and FEDOOP facilities initially listed) makes the first modification under the TAC rules. This creates a huge additional compliance burden for all stationary sources in Jefferson County over what the defined ambient issue has identified. Duplicative of existing Regulations 5.11, 5.12 and 150 USEPA MACT regs already cover. Potential huge conflict with existing permit restrictions on TAPs and increased delays in LMAPCD processing of permit changes required under the proposed regs.

► Section 1.74 Definition of Welfare includes effects on not just people, but on soils, plants, animals, man-made materials, visibility and weather. When it comes time to ask for a variance from any risk standard in the proposed TAC regs, welfare impacts can be asked to be evaluated by LMAPCD and there are no protocols established for many of these factors. How is a company or APCD plan on evaluating what the effects on the weather would be in an objective fashion? Although there are protocols for evaluating visibility effects, they do not address VOCs and are applied generally over vistas larger than just a few miles inside one county. What is included in the definition of materials for this regulation? What is the reasoning for including man-made materials and climate as issues to be evaluated under the definition of welfare?

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulation 1.06

Regulation 1.06: Stationary Source Self Monitoring, Emissions Inventory Development, and Reporting

In general, Regulation 1.06 is of concern because of the amount of enhanced emission reporting work required of affected facilities. In numerous cases, the District has not justified the need for certain burdensome requirements. In other cases, the District has heaped a lot of work onto relatively few facilities, without including other area sources that may contribute significant air toxic emissions. These burdens on stationary sources are compounded by the absence of an exemption to disregard de minimis quantities of emissions, while it is noted that other jurisdictions – notably Michigan – do incorporate de minimis exemptions into their air toxic regulations.

Furthermore, it is noted that the District should provide to each affected company data that will be required by emission unit, and/or if TAC data is not required for an emission unit. Most companies do not have staff (or, in some cases, software and equipment) that can handle this increased workload/data collection. Again, guidance needs to be provided by the District and companies need to know the specific, not general, requirements that will be required prior to the approval of these regulations. Does the District realize the cost/time that will be needed to perform these calculations, gather data, create drawings, install software for data collection, select contractors to gather data, etc.? All in all, this is a very costly and burdensome set of requirements with which facilities need to comply in an overly tight time frame.

► Section 1 - By removing the pre-existing clause "in accordance with such requirements as specified in these regulations," it appears that the APCD has expanded its authority to require emissions or parametric monitoring at any facility for any reason, or no reason. Is this the intended reading of the regulation? The necessity to invest in monitoring equipment should be tied to necessity to comply with regulatory requirements. Accordingly, APCD should reinstate the clause "in accordance with such requirements as specified in these regulations," in lines 14-15. Furthermore, there will be cases where it is not feasible to install or properly operate in-stack monitors (wet stacks, problems with existing duct –distance too short, etc.). In these cases, alternative monitoring and flexibility needs to be allowed and clearly stated in the regulation.

► Section 3.1 - Suggest language change – Change "**all** hazardous air pollutants" to "**applicable or suspected** hazardous air pollutants". Emission factors do not exist for all types of processes.

► Section 3.1.2.1 – Request a written change to include, "A stationary source that applied for an operating permit pursuant to Regulation 2.17 Federally Enforceable District Origin Operating Permits if the actual emissions from the source are 25 or more tons per year individually of sulfur dioxide, particulate matter, volatile organic compounds, or oxides of nitrogen, or."

► Section 3.1.3 – As written, this section imposes new emissions reporting requirements on minor sources, beginning with emissions occurring during CY 2005. Has the APCD planned notifying these minor sources specifically of these new reporting requirements, with enough advance notice that any necessary revisions to record keeping protocols may be implemented by January 1, 2005?

► Section 3.2, line 61 – The requirement for gasoline facilities to annually report their monthly gasoline throughput should be clarified to read "on or before April 15th of ***each*** year."

► Section 3.2 – The exemption language in Section 3.2 should be expanded from "which does not include the initial transfer of gasoline into the fuel tanks of new motor vehicles at an automobile or truck assembly plant" to read "excluding stationary sources subject to Regulations 2.16 (Group 1 stationary sources) and stationary sources that applied for an operating permit pursuant to Regulation 2.17 or a stationary source that is described in section 3.1.2.2 (Group 2 stationary sources)." Group 1 and 2 stationary sources will already be subject to the enhanced emissions reporting requirements of Section 4.3.2; requiring cold cleaner material usage, if also subject to Reg. 6.40, is duplicative and unnecessarily burdensome.

► Section 3.2 – What is the rationale for triennial reporting of cold cleaner material usage in allowing the APCD to assess the true environmental impact of these sources?

► Section 3.3 – What is the rationale for triennial reporting of coating and solvent usage from motor vehicle and mobile equipment refinishing operations in allowing the APCD to assess the true environmental impact of these sources?

► Section 3.4 – What is the rationale in triennial reporting of perchlorethylene usage from dry cleaning facilities in allowing the APCD to assess the true environmental impact of these sources?

► Section 3.6 - The APCD needs to provide guidance for calculating emissions for industry (especially for moderate and minor sources). For example, how does one calculate HAP emissions if no AP-42 emission factors exist for a given process? Will stack tests be required if HAPs are suspected, but no AP-42 emission factor exists?

► Section 4 - How can it be reasonably assumed that all Title V companies are currently collecting the required 2004 detailed data to submit enhanced emissions statements by July 17, 2005 when companies were not aware of any such need for information until e

unveiling of the informal draft regulations in September 2004? What is a company to do if they do not have the detailed emissions data?

► Section 4.1.3 - What is the reasoning behind requesting uncontrolled emission calculations when this regulation applies to monitoring of actual emissions?

► Section 4.2.1.1 – Section 4.2.1.1 should be deleted altogether. With three quarters of CY 2004 behind us, sources have not necessarily tracked TAC emission data to the level of detail required by section 4.4. Radical changes in record keeping protocols, including the possible necessity for new software applications, will likely be needed by many facilities to track daily and hourly emission rates. Many sources rely on mass balance calculations based on either purchase data or bulk usage rates; real-time record keeping (as required to track hourly emissions) is not standard industrial practice for many types of operations, including material usage/application.

► Section 4.3 - Many of the details required in this section are needed only if the facility opts to run the advanced models in Regulation 5.22. Furthermore, these administrative details do not correlate to any reduction in emissions. Accordingly, the request for a facility plot plan should be less prescriptive. Those facilities that have compiled this detailed information for the advanced models of Regulation 5.22 can submit such as part of their modeling effort, while all other facilities may be reasonably relieved of this administrative burden. This will be less labor intensive and costly for many businesses, allowing them to focus their attention and resources on critical regulatory compliance issues.

► Section 4.3.3 through 4.3.5 – Clarification is needed to identify that monitoring is not required to obtain this data for reporting.

► Section 4.4, line 179 – Revise this section to require resubmittal of uncontrolled emissions calculations only if "there is a ***potential increase***" in emissions, not simply required for every "change." This allows facilities the flexibility to change to less polluting materials without requiring resubmittal of uncontrolled emission data.

► Section 4.6 - When will the APCD inform a company that data needs to be submitted or submitted on an accelerated schedule? Given the level of detail and broad extent of the data request, how much time will a company be given?

► General - Why wasn't an exemption written specific to de minimus quantities incorporated into these regulations like other states and county programs (e.g. Michigan)? This is of great concern to the smaller and moderate size companies that will have to go through the additional data reporting and modeling just to show they are below de minimus levels. It also creates a heavier burden on smaller companies in Louisville versus other areas of the nation due to the additional requirements. Also, why are the SARA 313 Guidelines not utilized for reporting thresholds since they have been developed over the years, have had significant peer review, and worked well historically? APCD should look as incorporating the SARA reporting limits for guidance on this issue.

► General - The APCD should provide to each affected company, data that will be required by emission unit and/or if TAC data is not required for an emission unit. Most companies do not have staff that can handle this increased workload/data collection. Again, guidance needs to be provided by the APCD and companies need to know the specific, not general requirements that will be required prior to the approval of these regulations. Has the APCD determined the cost/labor time that will be needed to perform these calculations, gather data, create drawings, install software for data collection, select contractors to gather data, etc.? If so, what information is being used to determine the effected businesses general costs?

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Environmental Affairs Committee
Comments on
STAR Program

Regulation 1.07

Regulation 1.07 - Excess Emissions During Startups, Shutdowns, and Malfunctions

► Section 1.2 allows the APCD to deem a situation as experiencing "excess emissions" when there is "an appreciable increase in the emissions of a TAC **above the routine level of emissions** that results from a startup, shutdown, or malfunction" in the absence of that TAC having an emission limit. Why is APCD deeming a situation a malfunction even when there is no exceedance of an established emission limit?

► The volume of reporting and documentation required in this regulation will cause a great burden on the facilities to maintain and the APCD to review. Some of it is duplicative and unnecessary. The time frame allowed to submit reports is extremely short and in some situations may be unachievable depending on the severity of the malfunction or emergency.

► This regulation no longer recognizes "emergencies". All language referring to "emergencies" has been removed. Why is this the case?

► All excess emissions are automatically deemed a violation. No extenuating circumstances, no exceptions are considered. Why are there no exceptions granted or no flexibility in the regulation? APCD has expanded what will be considered a malfunction. There is lack of certainty as to what is a malfunction and it is not well defined in the regulation. The language "…are of a repetitious nature, or when more than 12 failures of the same or similar pieces of equipment occur in a 12-month period…" has been removed from the regulation. What is the reason for the lack of certainty in the definition of malfunction and the exclusion of the previous state language?

► Throughout the regulation there is lack of certainty regarding how quickly and in what situations a process will be shutdown by APCD due to a malfunction. This needs to be well defined in the regulation to allow businesses to know the extent and consequences of malfunctions.
The regulation states that even an OSHA plan can be included in the "Malfunction Prevention Program".

► Section 1.2 indicates that "a surrogate emission standard, such as volatile organic compound that would include the toxic air contaminant" (TAC) can be used when an applicable emission standard for TAC is absent. This is duplicative. When emission

standards exist for pollutants other than TACs, they should not be substituted to create false emission limits for TACs.

Section 1.2 also indicates that "excess emissions shall also include an appreciable increase in the emissions of a TAC above the routine level of emissions that results from a startup, shutdown, or malfunction" when there is no applicable emission standard. Firstly, this leaves it open for interpretation the definition of "routine level of emissions" and "appreciable increase" and how it should be determined. How are those determined? Secondly, malfunctions should only be related to "failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner that may result in emissions that exceed an applicable emission standard" as stated in Regulation 1.02 Definitions. Therefore, there are no excess emissions if the permit limits are not exceeded, even when emissions are above a "routine level of emissions", but lower than the permit limit. This statement, as written, could cause conflict with and be contrary to established permit conditions.

Does the one in a million risk level become the new or amended air emission limit for TACs? How do true minor sources, which are exempt from Regulation 5.21 report? How does this relate to hourly limits already in existence because of APCD Regulations 5.11 and 5.12 for Toxic Air Pollutants?

► Section 2.1 - The requirement to remain in compliance with all emission standards during start ups and shut downs should not be a requirement for emission standards that are specifically not applicable during startups and shutdowns or other exempted operational conditions as cited in various regulations. For example, see APCD Regulation 6.07 Standard of Performance for Existing Heat Exchangers Section 3.2 and APCD Regulation 7.06 Standard of Performance for New Indirect Heat Exchangers Section 4.2 for opacity.

► Section 2.2 - Excess emissions from a process or process equipment due to startup, shutdown or malfunction should not automatically be deemed a violation of the applicable emission standard. Certain considerations should first be made as stated in sections 2.3 of this regulation before determination of a violation is made and subsequent enforcement action.

The region 4 CEM Enforcement Plan (CEP) should also be incorporated into this regulation. This is a living EPA endorsed document that presently resides in the EPA Air Enforcement and Compliance website:

(http://www.epa.gov/region4/air/enforce/policy.htm)

This document is meant "to ensure that sources with monitoring requirements are in continuous compliance with emission standards in addition to properly operating and maintaining their facilities and CEMs". Specifically, the guidance document sets target criteria and follow up actions for increasing percent of time out-of-compliance and percent of monitor downtime (starting at 2.0%).

► Section 2.3.5 - When determining whether stopping input feed or shutting down process equipment is completed "as soon as possible", it should be taken into consideration the time it takes facility personnel to investigate the root cause of the malfunction or determine whether the malfunction is actually causing an emission exceedance or whether it is a malfunction of the monitoring equipment and not a true exceedance (for example). The time necessary to stop input feed or shut down processes/pollution control equipment in a manner that will not cause damage to the equipment as well as assure the safety of the facility personnel should also be a consideration.

► Section 2.3.8.3 and 2.3.8.4 - Please provide examples of what would be sufficient evidence to prove that the malfunction was unavoidable as requested in these two sections. These requirements are vague and could be misinterpreted/misunderstood causing an undue amount of paperwork.

Please explain what is meant by the term "properly signed operating logs".

► Section 2.4 – Please explain the purpose for adding the sentence "nothing in this regulation shall be construed to restrict any person from seeking injunctive relief from excess emission".

► Section 2.6.3 - Electronic mail notification date and time should be determined by when the e-mail was sent by the facility not when the e-mail was opened (received) by the recipient at the APCD. Server downtime at APCD and other e-mail interruptions are out of the control of the reporting facility and should not result in a noncompliant situation.

► Section 3.2 - Please insert that notifications will be made to the District "within 1 hour or **as soon as possible"** for unforeseen shutdowns to allow some flexibility to the facility. One hour is a very short timeframe to coordinate staff in situations that may be staff and labor intensive and this requirement as written is an undue burden that does not create any real benefit in reducing emissions. In the event of an emergency, this short timeframe could also distract personnel when their focus should be directed toward responding to the situation.

► Sections 3.3 and 4.3 – The APCD should specify a different after-hours reporting mechanism than the present method stated in the draft amended regulation. Only one type of report should be required for after-hour reporting to avoid duplicative reporting both through e-mail and phone voicemail. For example, all the information could be given either by e-mail or phone voicemail, but should not be required for both.

► Section 3.4 - Please explain how an unplanned startup can be necessitated by a malfunction. How is an unplanned startup defined?

► Section 3.5.7 - In some cases, excess emissions during a startup or shutdown may be anticipated because of past experiences and as a further complication, may have been caused by various reasons. Hypothetically, a facility may report on the initial notification that excess emissions may be encountered during a startup or shutdown due to past experiences not hardcore data that indicates excess emissions will definitely occur. During the initial notification, the risk of excess emissions may only be a possibility. Therefore, the reason (as required in this section) would be unknown. Considering this, Section 3.5.7 should be an optional item on the initial notification. This information can always be given during follow up reports if not given (or known) at the time of the initial notification.

► Section 3.6.1 - Please provide an explanation of how "process equipment design" and "pollution prevention measures" can be used to reduce emissions during a startup or shutdown that is experiencing excess emissions and in what way this may affect enforceability of this regulation and potential violations.

► Section 3.6.2 - Consideration should be made to allow facilities to operate their equipment during startup and shutdown situations in a manner that is both safe to facility personnel and does not cause damage to the equipment (following equipment manufacturer guidelines for example).

► Section 3.8.5 - The phrase "…the physical and chemical composition and calculated quantity and concentration…" should be changed to read "…the pollutant and calculated quantity, calculated concentration, emissions monitor recording or results of an EPA approved test method …" to allow flexibility for the various types of pollutants and emission limits mandated in the regulations and/or permit (such as opacity).

► Section 3.8.7 - Facilities should not be required to provide this information to the APCD because it will (and presently is) information already provided to the APCD by the facilities. This is a duplicative reporting requirement for the facility that requires a comprehensive and accumulative database that should be created and maintained by the APCD. Therefore, this item should be deleted from the regulation.

► Section 4.1 - The phrase "…as promptly as possible, but no later than 1 hour following the start of the malfunction, notify the District…" should be replaced with "…within 1 hour or as soon as possible following the start of the malfunction, notify the District…". This allows more flexibility for the facilities to provide all the required information to the APCD in a timely manner. One hour in most cases will not allow enough time to thoroughly investigate the malfunction (or existence of a malfunction or true exceedance). This short time frame for notification could lead to mistakes and/or confusion in reporting and more paperwork if facilities are not given an appropriate time frame to investigate and report during these labor intensive situations. Requiring reporting within 1 hour does not decrease emissions, but rather could increase paperwork and confusion.

The text, "A call placed to the emergency number 911, constitutes notification to the District" should not be removed from the regulation. During a true emergency, the fewer phone calls that are required of facility personnel allow them to focus their attention and effort on minimizing the impact of the event. Calling 911 to notify all the local agencies in an emergency simplifies reporting for the facility. If APCD is experiencing difficulty receiving timely notification of 911 calls, then the APCD should work with Emergency Management Agency to rectify this problem since this situation is already such a labor intensive and stressful situation for the facility.

► Section 4.2.4 - Consideration should be made for the level of excess emissions, type of excess emissions and the health affects (if any) caused by the excess emissions before requiring a facility to plan and submit information for the shutdown of a process or process equipment. For example, pollutants like opacity are more of an aesthetic requirement rather than a health or environmental based requirement (assuming that particulate matter levels remain in compliance during the opacity exceedance). In many cases, emission levels may only be slightly over the standard and can quickly be returned to a compliant level if the facility is allowed time to investigate and make any necessary operational changes. Therefore, this item should read "The date and time of the beginning of the malfunction and the estimated time before the process or process equipment can be returned to normal operation and the estimated time period during which excess emissions are likely to occur."

► Section 4.2.5 - The phrase "…the physical and chemical composition and estimated quantity and concentration of excess emissions for each air contaminate," should be changed to "…the pollutant and calculated quantity, calculated concentration, emissions monitor recording or results of an EPA approved test method for each air contaminate with excess emissions…" to allow flexibility for the various types of pollutants and emission limits mandated in the regulations and/or permit (such as opacity).

► Section 4.2.7 - Consideration should be made for the level of excess emissions, type of excess emissions and the health affects (if any) caused by the excess emissions before requiring a facility to plan and submit information for the shutdown of a process or process equipment. For example, pollutants like opacity are more of an aesthetic requirement rather than a health or environmental based requirement (assuming that particulate matter levels remain in compliance during the opacity exceedance). In many cases, emission levels may only be slightly over the standard and can quickly be returned to a compliant level if the facility is allowed time to investigate and make any necessary operational changes. Therefore, this item should be deleted.

► Section 4.3 - Reference to 4.2.7 should be deleted for reasons stated above.

► Section 4.4.1 - Please provide an explanation of how "process equipment design" and "pollution prevention measures" can be used to reduce emissions during a startup or shutdown that is experiencing excess emissions and in what way this may affect enforceability of this regulation and potential violations.

Consideration should be made for the level of excess emissions, type of excess emissions and the health affects (if any) caused by the excess emissions before requiring a facility to plan and submit information for the shutdown of a process or process equipment. For example, pollutants like opacity are more of an aesthetic requirement rather than a health or environmental based requirement (assuming that particulate matter levels remain in compliance during the opacity exceedance). In many cases, emission levels may only be slightly over the standard and can quickly be returned to a compliant level if the facility is allowed time to investigate and make any necessary operational changes.

► Section 4.4.2 - Consideration should be made to allow facilities to operate their equipment during startup and shutdown situations in a manner that is both safe to facility personnel and does not cause damage to the equipment (e.g. following equipment manufacturer guidelines).

► Section 4.6 - The phrase "No later than 1 hour after the excess emissions ended, the owner or operator…" should be replaced with "Within 1 hour or as soon as possible after the excess emissions ended, the owner or operator…". This allows more flexibility for the facilities to gather quality information that can be provided to the APCD in a timely manner. This short time frame for notification could lead to mistakes and/or confusion in reporting and more paperwork if facilities are not given an appropriate time frame to investigate and report during these labor intensive situations. Requiring reporting within one hour does not decrease emissions, but rather could increase paperwork and confusion.

► Section 4.7, 4.7.3, 4.7.4, 4.7.5 - These items should be deleted. This is duplicative information that is required earlier in the notification process (see Section 4.2 and Section 4.6 in the draft amended regulation).

► Sections 4.7.6 and 4.7.7 - To avoid unnecessary paperwork, Section 4.7.6 and 4.7.7 can be incorporated into Section 4.8. This combined with the comment above will completely eliminate the need for the entire 15 calendar day notification (all of Section 4.7) making more efficient use of time and resources.

► Section 4.8 - This 60 day reporting requirement should only be required for instances where malfunctions "…are of a repetitious nature, or when more than 12 failures of the same or similar pieces of equipment occur in a 12-month period…" and not for every isolated malfunction. Language that presently resides in Section 4.2 of Regulation 1.07 should not be removed (as shown in the draft amended version). Section 4.2 allows for flexibility and allows the APCD to pursue corrections from those facilities that are potentially negligent in their operation. Section 4.8 in the draft amended regulation as written could create a huge paperwork burden both on the facilities and APCD and from a practical standpoint does not reduce emissions. Therefore, the entire Section 4.8 should be eliminated.

► Section 4.8.2 - Facilities should not be required to provide this information to the APCD because it will (and presently is) information already provided to the APCD by the

facilities. This is a duplicative reporting requirement for the facility that requires a comprehensive and accumulative data base that should be maintained by the APCD. This item should be deleted entirely from the regulation.

► Section 5.1 - Please verify that it will be the responsibility of the facility or their representative to perform the "engineering review and analysis of the cause of the excess emissions and design of modifications to effect compliance with the emission standards."

► General Comment - Consideration should be made for emergencies in this regulation (events that occur beyond the control of plant operations and equipment dependability, like "acts of nature"). Language related to emergencies should not be removed from Regulation 1.07 as shown in the draft amended version.

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulation 1.20

Regulation 1.20: Malfunction Prevention Programs

There is a concern that the "Malfunction Prevention Program" can become applicable to any facility having even a minimal number of malfunctions (no de minimis levels defined). Additionally, continued upkeep of the document is required since it appears to be a long term document.

► Section 1 – The definition and determination of an "affected facility" should be more clearly defined so as to allow some certainty for industry.. More definitive criteria should be developed, as are described below.

► Section 1.1.1 - The occurrence of limited and isolated malfunctions should not cause an individual facility to enter a "Malfunction Prevention Program". Facilities that experience malfunctions that "…are of a repetitious nature, or when more than 12 failures of the same or similar pieces of equipment occur in a 12-month period…" would be a more appropriate candidate for the "Malfunction Prevention Program". Language that presently resides in Section 4.2 of Regulation 1.07 could serve as a good indication of whether this draft regulation becomes applicable in a given situation. Section 4.2 of the draft amended version of Regulation 1.07 is shown to be deleted. It should not be deleted for reasons given in the comments for draft amended Regulation 1.07 Excess Emissions During Startups, Shutdowns, and Malfunctions.

► Section 1.1.2 - A "Malfunction Prevention Program" should not be required for malfunctions that have not been verified (not for situations in which "…a malfunction involving the process or process equipment **may have** occurred…"). Therefore, this item should be deleted. A "Malfunction Prevention Program" would better serve facilities that have malfunctions that "…are of a repetitious nature, or when more than 12 failures of the same or similar pieces of equipment occur in a 12-month period…".

► Section 1.1.3 - Please explain how "…a malfunction that may become harmful to public health or welfare…" will be determined.

► Section 2 – The applicability of the regulation should be limited to the process equipment that has sustained the repetitious malfunctions. As written, one troublesome piece of equipment triggers the development of a "Malfunction Prevention Program" for the entire facility. Please explain if this is the intent of Section 2.

► Section 3.1 - Please explain how long the program will be in affect. This section indicates that the plan will be updated at least every 5 years, which indicates a long term commitment. Some corrections could take considerably less than 5 years to implement. Will a shorter commitment term be allowed for the "Malfunction Prevention Program'?

► Section 3.1.6 - This item may be difficult to address in the program considering that there can be multiple reasons for malfunctions with each having multiple correction procedures. Therefore, this item should be changed so that it becomes a general statement in the program that the facility will "implement corrective procedures in the event of a malfunction or failure resulting in excess emissions" as opposed to having specifics that may or may not cover every situation and could change often.

Malfunctions should only be related to failures that result in emissions of air contaminants **above emission limitations and not above normal levels** as stated in this regulation.

► Section 3.1.7 - To avoid repeated changes to the "Malfunction Prevention Program", the "Malfunction Prevention Program" should reference existing facility documents that contain this type of information (such as a CEM QA/QC plan or Standard Operating Procedure) as opposed to incorporating it directly as presently stated in the draft amended regulation.

The time between calibrations, as referenced/stated in the "Malfunction Prevention Program" should not contradict or conflict with already existing regulatory calibration requirements (40 CFR Part 75 requirements for example).

► Section 3.1.9 and 3.1.10 - Please explain the meaning of these items.

► Section 3.2 - The "120 day" and "60 day" requirements should be from the time the **facility receives** notification from the APCD. Often, materials are received from the APCD well after the date on the notification. This reduces the facilities response time and may not allow enough time to address everything completely.

► Section 3.3 - The facility should have at least 60 days to implement the "Malfunction Prevention Program" after receiving notification from the APCD that the "Malfunction Prevention Program" has been approved. As was learned with the Title V permitting process, it is difficult to implement a program immediately when all the final requirements are not necessarily known by the facility until the day the permit (or in this case, the "Malfunction Prevention Program") is received. Sixty days will allow the facility time to get all the requirements in place and assimilate the appropriate personnel to carry out the required tasks. The 60 day implementation period will allow for a smooth transition and give the facility time to fully understand and comply with the requirements as stated in the program.

► Section 3.4 – Will the "Malfunction Prevention Program" be incorporated into the Title V permit (especially when considering that information like individuals names and positions change often)?

Although a "Malfunction Prevention Program" might be an applicable requirement of the facility's permit, it must not be made part of the Title V or FEDOOP permit as text or as an off-permit document. Doing so would severely limit the facility's ability to change or upgrade the program as provided in this section.

► Section 3.5 - Including an "Occupational Safety and Health plan" in the "Malfunction Prevention Program" seems to be inappropriate and not necessary to remedy the chemicals of concern. How does APCD intend on implementing OSHA requirements?

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulation 1.21

Regulation 1.21 – Leak Detection and Repair Regulation

- The processes that are already subject to Part 60, 61, or 63 LDAR do not have identical requirements. Imposing HON LDAR on Non-HON sources is confusing and has little value. The various federal leak detection programs have been developed over the years to address particular industries. They are not one size fits all. By law, the company will have to comply with the federal LDAR program they fall under. Since there are subtle (and not so subtle) differences in the requirements, adding a second LDAR program on top of the required program is confusing and likely to lead to non-compliances brought about by interpretation difficulties while applying two similar, but not the same, programs.

  Examples of areas with differences between the federal programs are written plan requirements; leak identification removal; calibration gas; schedule for monitoring skip periods; valve, pump, connector, agitator, pressure relief device, instrumentation system, compressor, sampling connection system, product accumulator vessels, and control device requirements; and various alternative means.

- There's a much higher likelihood for compliance to be achieved by simply adjusting (lowering) the leak definitions within the existing applicable federal LDAR programs. Then, monitoring and work practices would meet both the federal requirements and the new STAR requirements without complicated reconciliation of the requirements and monitoring results.

- Under the proposed system companies will need to maintain two separate set of books and do two separate reports, one for the Federal LDAR Program and one for the APCD Program, since the criteria will not be the same.

- The chemical applicability of the regulation has not been adequately defined. The terms "organic compound" and "volatile organic compound" are used interchangeably. If the intent is to ratchet down the existing LDAR program, then it should specifically state the applicability is the same as the Part 60, 61, or 63 applicability: the same regulated substance, same minimum percentage composition, same minimum hours of service exclusion, *etc*…

- Section 1.4.5 - Leak concentrations are to be measured by a meter calibrated on methane. Some of the LDAR regs allow n-hexane and all allow a different substance, if methane (and n-hexane) doesn't produce an adequate calibration precision for the instrument, relative to the substance being monitored. This option is needed.

- Section 1 - A definition is needed for a "process drain", "junction box vent", "screening concentration", "reworked piping".
- Section 3 –
  - The APCD has added several subclasses of equipment that are already covered in the various LDAR programs. The following equipment are already considered in the connector category: blind flange, heat exchanger head, bolted manway, and hatch, as well as the connections for a sight glass, meter, and gauge. These do not need to be singled out.
  - If connectors, agitators, and/or sampling connection systems are already covered in a Federal LDAR program, then they should not be included in the APCD program in Section 3.1 or in the accounting of leakers in Section 3.2. Including these equipment types in both the federal leak calculation and the APCD leak calculation is confusing and misleading.
  - There is no distinction made for service for all components - i.e., light liquid service, gas/vapor service or heavy liquid service. This should be made consistent with the MACT LDAR programs.
- Section 3.7 - If a company is able to manage 25,000 LDAR components in an existing paper system, they should be allowed to continue to do so.
- Section 3.8 - What are the criteria for requiring more frequent monitoring?
- Section 4 - Need to define how you deal with a leak that has been reduced from >10,000 ppm to <10,000 ppm (although not stopped yet) through extraordinary efforts. It should revert to "regular" repair from "fast track" repair schedule.
- Section 4.3 - Need to define "extraordinary efforts" in Section 1.
- Section 4.4 - Since the federal LDAR programs already require extensive documentation for "delay of repair", why bother adding a supervisory signature?
- Sections 5.1 and 5.8 - The wording in appears to be incorrect. It should require monitoring for leakage past the first pressure relief *component*, which is not necessarily a valve.
- Section 5.2 - Shaft sealing systems should only be required of equipment meeting the minimum service criteria of the applicable federal LDAR regulation: 5% OHAP service [Subpart H], 10% VHAP service [Subpart V], etc… This should be addressed by fixing the applicability of the entire regulation.
- Section 5.6 - It would be less confusing if Reg. 1.21 adopted MACT terminology, such as "unsafe-to-monitor" and "difficult-to-monitor", instead of using their own terms. Explain the reasoning for not adopting MACT terminology.
- Section 5.7 - Consider alternative standard of pressure checking component before placing it in service.
- Section 6 - Training is a reasonable idea; however, *annual* training is a little excessive. Every three years should be more than sufficient. Please explain the reason for the need for annual training?

- Section 7.1 does not consider the use of a flow indicator, as allowed in §63.172 (j)(1). Appropriate exemptions or more specific citations are needed to correct this.
- Section 8.2 - Is there intended to be a difference between "continuous vacuum service" (in Reg. 1.21) as opposed to "vacuum service" (in various MACT LDAR programs)? The terminology should be consistent with the federal definition(s).
- Section 8.2.4 and 8.2.5 - A sampling connection system and instrumentation system in compliance with any federal LDAR program's requirements should be exempted from Reg. 1.21. (Currently, the requirements we found in the various LDAR programs are the same.) Also, do not specify the date of the federal rule; instead, use the current version to avoid confusion.
- Section 9 - The "minor modifications" already considered within EPA Method 21 (such as different calibration gas) should not require APCD approval. Please explain the reasoning for this approval by APCD.
- Sections 11, 12, and 13 – Please explain the inclusion of these sections in the regulation.
- Section 11 – Please explain why this is needed in this regulation? If this section is included in this section, then:
    - a timeframe for submittal, approval, and implementation is needed.
- Section 12 – This requirement should be dropped from the regulation due to several factors including economic and program administration:
    - From an economic standpoint, each facility subject to this proposed regulation will be required to hire and pay an independent third party consultant to perform such an audit. Depending on the complexity of the site, the cost of conducting such an audit could range from $5,000 to $20, 000 per audit. This cost would have to be absorbed by the facility in addition to the on-going program. In addition, due to the complexity of such programs, the majority of companies contract with outside independent contractors to help manage such programs. APCD has the authority to audit this program at any time and such a provision is not needed. The audit requirement will do little to reduce the emissions of toxic air contaminants. For example, if an audit uncovers one unmonitored valve in light liquid service, the additional emissions not previously accounted for will be approximately 0.01 lb/yr. (This value is low because the equipment is assumed not to leak; if it had leaked, it would have been found an accounted for while monitoring other nearby equipment.) Even if ten unmonitored pieces of equipment were found by the audit, the cost of the program does not justify the infinitesimal emission quantification.
    - With regard to overall program administration, the requirement for each company to implement an independent third party audit does not serve a purpose, since the APCD can inspect a facility's LDAR program any day of the week over the course of a year. Creating an additional program to manage within the already complex LDAR program becomes more of a burden due to time constraints on plant personnel who have additional duties and programs to administer. Based on

the language in the proposed regulations, it looks as if every facility will have to hire one person who will just oversee and administer only the LDAR program. For large and small facilities, one individual is tasked with many responsibilities to administer on a day-to-day basis. Hiring an additional person to manage such programs is impractical for businesses making pennies on the dollar in order to maintain profitability in our current global economy. Such additions of personnel in the business world require productivity or cost offsets in order to control costs, in addition to program implementation.

- The APCD requires all of the auditing to be completed in a set time frame, which seems reasonable, but they have not stated what would be done with the information from the audit and how they derived the time frame to submit information.
- Based on the issues and concerns provided, Section 12 of regulation 1.21 should be deleted from the regulation.

- Section 13 - Each federal LDAR program has slightly different requirements for written information. The HON LDAR requirements don't necessarily make sense when applied to processes subject to other LDAR requirements. Please explain how this is going to be reconciled.
- Section 14:
  - The chemical applicability has not been adequately defined. First, the inorganic compound has to have the ability to leak: it must be gaseous or otherwise volatile. Solids can't leak. Second, the list should be limited to Category 1 and 1A inorganic compounds. Therefore, the APCD should simply list the few chemicals to which this applies.
  - As the regulation is written, inorganic LDAR only applies to companies that are under another federal LDAR program (for VHAPs). How was that determined?
  - There may not be adequate instrumentation available to detect the inorganic substances in question. There are instruments available to detect chlorine and ammonia. How are companies to detect the other inorganics?
- The exemption for R&D facilities and bench-scale batch processes from §63.160(f) should be applied to Regulation 1.21 in total.

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulation 2.08

Regulation 2.08 - Emission Fees, Permit Fees, Permit Renewal Procedures, and Additional Program Fees

The District proposes that major sources fund the major portion of the program based on their Title V status, regardless of actual TAC emissions. A suggestion would be to provide a financial incentive in this proposed fee structure for a facility to decrease (or even eliminate) its TAC emissions.

Additionally, it is alternately suggested that the TRI threshold limit may be used when calculating the emission fees. Emission inventory reports should be consistent with the TRI reports. It could be confusing to have different reporting limits.

Finally, the District has indicated that the fees will increase substantially from approx $100,000 in 2005 to $300,000 in 2006 and then again in 2007. The fee structure needs to be clearly defined in the draft regulations during the public review process for all years. For businesses operating budgets, it is important to ask the APCD to post and/or mail to each company that would be required to pay additional emission fees, a statement which identifies the chemicals (specific HAPs) and tons that the fee is based upon in order to fully evaluate the financial burden the fees will place on the businesses. Is this planned to be done by APCD?

► Section 1.2 - What specific chemicals are included in "all the single pollutant actual emissions"? To what or which pollutants does this apply?

► Section 2.4 - Does "permits reviewed or issued" apply to permit renewals?

► Section 2.5.1.10 - What is the significance of this change? Does this mean that every small source must pay on every pollutant - even if it is a minor source (<5tpy) and emits less than the significance level and is not subject to NSPS or NESHAP.

► Section 6.3: How were the base fees for Title V sources in Section 6.3.1 and FEDOOP sources in Section 6.3.2 developed? We recognize the emission information from the smaller sources will not be available the first year, which makes some assumptions necessary in the assignment of fees. However, in subsequent years, once emissions have been reported, the allocation of costs should be proportional to the facility's emissions for all facilities. (No base fee; no singling out Title V companies to pay the largest burden.)

► Section 6.3.1.2 – This section states that the District will make available a list of Title V sources, and the percentage of the total for each Title V sources. This list should be made available prior to the public comment period.

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulation 3.01

Regulation 3.01 - Ambient Air Quality Standards

► Section 8 – If Regulation 3.04 is repealed, please explain the interplay and applicability of Section 8 of this regulation upon repeal.

► Section 8 – Will Regulation 5.21 replace all established TAP standards?

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulation 5.01

Regulation 5.01 - General Provisions for TACs

► Section 1.9 – Definition of New or Modified applies proposed full list of TACs retroactively to permit applications that came in before the regs are adopted. If APCD has a backlog of permits when these regs are promulgated, will the sources who have been waiting for their permits have to redo them and calculate risk from all the 191 TACs?

► Sections 2 & 3 – Applicability and General Duty section's last sentence ties the requirements for the TACs, HAPs and other TAPs to any process or process equipment modification. What is the reason for no de minimis exemptions? Does process modification now include a change in raw materials?

► Section 4.2.5 – Please explain the emissions reductions projected for inclusions of cold cleaners.

► Section 4 – This section requirements may have applicability for a new process/process equipment but the applicability for a modified process or process equipment is questioned. Please explain the reasoning of this section to both modified processes and modified equipment versus new processes and new process equipment.

► Section 4.1.3 – Will a company have to install a continuous or intermittent emissions or parametric monitoring system if it is demonstrated that it is below the limit?

► Section 4.2.5 – Please explain the emissions reductions projected for inclusions of cold cleaners.

► Section 5 – If a company's emission in Regulation 5.21 and 5.22 are determined to be low enough that no controls are required, will Section 5 allow the company to be in compliance with the Regulations 5.11 and 5.12 as well? If not, please explain.

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulations 5.20 & 5.21

Regulation 5.20 Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant

SECTION 2 Determination that a Toxic Air Contaminant is a Carcinogen

► Section 2.1.2 expands the definition of carcinogen beyond those toxic contaminants for which information is available in one of the references in Section 3.3 (discussed above). It expands this definition to any "known" or "reasonable anticipated" carcinogen published in the most recent relevant report by the National Toxicology Program. In most cases, the contaminants in this report will have data listed in the references in Section 3.3. However, if data for a compound is not available in one of the references in Section 3.3, then how is a facility to evaluate its carcinogenic risk? Instead, we propose that the language in Section 2.1.2 be deleted. This change will allow facilities to only evaluate cancer risks for compounds for which data is available to do so.

► Section 2.1.2 allows the APCD to classify a compound as a "carcinogen" if certain relevant data supports this assumption. Presumably the APCD would only do this if data about a compounds carcinogenic risk were not already included in the documents referenced in Section 3.3. (If such data is in these documents, the compound would already be classified as a carcinogen per Section 2.1.1). If the APCD takes the step of adding a new compound to the list of "carcinogens", the regulations should also require the APCD to do the necessary work to determine a URE or BAC that companies can use to assess the risk of their emissions for such compounds. It would be too much to expect our area businesses to independently research and determine the health effects of new compounds if US EPA, California, Michigan and Jefferson County have not been able to do so.

SECTION 3 Cancer Risk Benchmark Determination Methodology

► Section 3.3.4 – This section provides four different guideline documents for deriving BACs for carcinogenic toxic compounds if data for a particular toxic is not available in one of the 3 references listed in Sections 3.3.1 through 3.3.3. However, the references listed in Section 3.3.4 only provide an overview of the approach to reviewing existing study data. They do not contain the detailed data or mathematics necessary for deriving UREs/BACs. If US EPA, California and Michigan (the sources referenced in 3.3.1-3.3.3) have not already calculated these numbers, it is often because sufficient information is not available. Expecting companies to have the background and tools to do this on their own, or even with the aid of a risk assessment professional, is asking too much. In fact,

even most risk assessors do not have the appropriate background or tools for deriving inhalation risk health effect estimates for carcinogens. Therefore, we suggest that section 3.3.4 be deleted. Instead, if a BAC cannot be determined through use of the references in Sections 3.3.1 through 3.3.3 (lists from US EPA, California and Michigan), then it should not be considered a carcinogen for the purposes of this rule and only non-carcinogenic risks should be evaluated.

SECTION 4 Chronic Noncancer Benchmark Determination Methodology

► Section 4 – Including Noncancer risk evaluation and goals increases the complexity of the regulation, and the cost to the regulated community significantly. Has the District assessed the estimated costs and benefits associated with the action, the feasibility of alternatives, and a comparison with any minimum or uniform standards under the Clean Air Act requirement that justifies the addition of the need to add a "noncancer" benchmark determination?

► Section 4.3: This sections states that an inhalation RfC can be extrapolated from an oral RfD, if an inhalation RfC is not available in sources identified in Sections 4.1 & 4.2. This route-to-route extrapolation, while seemingly logical, is not acceptable based on the current USEPA risk assessment methodology due to the unique pharmacokinetics following inhalation exposures.

► Section 4.6 – 4.10 What is the information source for the 7-day inhalation NOAEL, and other alternative BAC_{nc} calculation methods suggested in 4.6 through 4.10? These calculations are to be used if one of the earlier listed approaches does not have available data. However, no reference documents are listed for these alternative methods. Are facilities to use the earlier referenced documents, preferentially in the order listed? Can anybody's study be used? Requiring a facility to research the entire universe of studies to see if any of them have a 7-day inhalation NOAEL, or other alternative data source is a lot to ask. Please explain.

► Section 4.11: What is the basis for the proposed "default" BAC of 0.04 ug/m3 to be used when no other data is available? This seems arbitrary and rather high for a non-cancer risk BAC. Given the long list of BAC_{nc} methods available in 4.01 to 4.10, we'd suggest that if a BAC_{nc} can not be determined by one of the other methods, then the facility need not consider non-carcinogenic risk. If a default number must be used, it should be much higher. For example, the majority of BAC_{nc} data is greater than 30 ug/m3.

SECTION 6 Available Documents

► Section 6: This section states that the APCD will maintain a current list on its web site of the benchmark ambient concentrations (BAC) that have been developed pursuant to this regulation. This seems helpful, but in fact, the rule leaves the responsibility to develop BAC's on the individual facilities. As the rule is currently written, a source cannot trust that the APCD's website has the latest, most appropriate BAC. Instead, a

source must go to directly to the documents listed in Section 3 and 4 to develop its own BAC. The rule would be much less burdensome if the APCD would, instead, take the responsibility to review the various sources of data and maintain a listing on its web site of BAC data that sources actually can use. Likewise, the business community and public could better understand the impact of the rule and more effectively comment on the draft if such a listing were already developed and available. When is the APCD intending to create such a listing during or after the rule becomes effective?

REGULATION 5.21 Environmental Acceptability for Toxic Air Contaminants

► General - The proposed rule does not take into consideration actual population exposure. We encourage the District to provide the flexibility to consider actual population exposure levels in instances where the rule might otherwise require controls. A risk reduction program should address real hot spots of human exposure and risk. The current proposed rule may inappropriately require stringent emission controls to industry groups having little impact on population exposure and no controls on those source categories having the most human risk.

► Section 5.21: The Environmentally Acceptable Levels (EAL) appear to be set pretty conservatively. For example, while a cancer risk level less than $1x10^{-6}$ is clearly insignificant, a risk above that is not necessarily unacceptable. Environmental agencies approval of risk assessments reflecting risks of $1x10^{-5}$ and $1x10^{-4}$ is not uncommon. Targeting less than $1x10^{-6}$ risk level, especially in heavily industrial areas may be unrealistic, overprotective and unnecessarily costly. The proposed rules EAL is much more stringent than, for example, Ohio's air toxic policy. The below table illustrates the much greater stringency of the APCD's proposed rule than current Ohio Policy. The imposition of unnecessarily stringent goals or standards may significantly increase the cost to businesses in Jefferson County verses other states in which businesses may locate. An overly restrictive policy will discourage existing or new business development.

Toxic Contaminant	Jefferson Co. Proposed BAC ug/m3	Ohio MAGLC (ug/m^3)
Carcinogenic BACc		
Benzene	0.13 to 0.45	762
Cadmium[3]	0.0006	0.24
Chromium[4]	0.0001	0.24
Formaldehyde	0.08	6.49
Lead compounds	0.08	1.19
Napthalene	0.029	1238
Nickel[6]	0.004	23.8
Non-Carcinogenic BACnc		
Cobalt (and its compounds)	0.20	0.48
Copper (and its compounds)	2.0	4.76
Manganese (and its compounds)	0.05	4.76
Sulfuric acid	10.0	23.81
Toluene	400.0	4476.19

Ohio Toxic Policy **MAGLC** = Maximum Allowable Ground Level Conc.

► Section 1.1 – It is unclear how the concept of T-BAT will be utilized in applying these rules. The definition is somewhat vague. Also, the rule doesn't specifically require T-BAT to be employed in any particular circumstance. Neither does it say that if you implement T-BAT, that this will be sufficient. The rule merely suggests that the District will consider whether or not it has been employed in evaluating a request to allow emissions that exceed one of the health risk goals. Some degree of vagueness is perhaps desirable to allow each circumstance to be evaluated on a case-by-case basis. However, it is difficult to understand the impact of the rule, or its potential benefits, when the potential need for add–on controls is completely at the agencies subjective discretion. For example, if a goal is exceeded despite the use of T-BAT, is this acceptable? Literature about the program from the District suggests that implementation of T-BAT is sufficient to demonstrate compliance with this rule. However, this isn't stated in the rule. Also, is a source always going to be required to implement T-BAT if a goal would otherwise be exceeded? Additional information on how the District plans require T-BAT is needed.

► Section 2.6: The rule does not seem to allow an exception to a facility meeting the standards in 2.5.2 and 2.5.3. If the District staff and Board will consider requests for modification of the EA level that would exceed these standards, then such a procedure should be mentioned in the rule. Likewise, if this is the case, shouldn't these be listed as "goals" not standards? Standard implies a never to be exceeded value. Please explain.

► Section 2.8 - Equations 5 and 6 do not seem to recognize that the maximum concentrations from different sources will almost always occur at different geographic locations, is this the intended case? What was the rationale for the proposed treatment of the maximum impacts of all sources from all facilities in the county added cumulatively?

► Section 3.10 –How does the APCD plan on to determining how a synergistic or additive toxicological effect may adversely affect human health?

► Section 2.8 – Please explain the rationale to require facilities to implement emissions reductions if they contribute to a county wide exceedence of a goal. If a facility has already implemented, or is in the process of implementing, District approved controls in

response to an exceedence of their site-specific EAL, does this section allow the APCD to make more reductions based on the countywide goal? The APCD needs a schedule or deadline for evaluating countywide risks and determining appropriate actions.

► Section 3.13 – This section, like Section 2.8, needs to have a deadline for the APCD . Also, this section is vague about how the APCD will determine the ambient air concentration of a contaminant and the process through which it will require sources to reduce emissions. Please explain this process.

► Section 5.3 – It is believed that the APCD can place additional restrictions on stationary sources if the community can not meet the 1 in a million goal. In the case of 1,3-butadiene, even the control sites as defined in the West Louisville Taskforce Study could not meet the standard set forth in this regulation. In fact EPA websites, indicate that no US city measuring this chemical of concern can meet this goal, even those without users of this chemical. Please explain the rationale behind only regulating stationary sources through this regulatory package.

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulation 5.22

Regulation 5.22 Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant

Issue	Citation	Explanation	Recommendations
Use of Goals & Standards	Section 1.1	Although the proposed regulations imply there is a difference between a goal and a standard, sources would have to petition for a variance if they couldn't meet the goals. Since there is no administrative mechanism in place for variances, the administrative effect is the same as if the goal is a standard.	
Calculation of maximum ambient concentrations	Section 1.3	The last sentence of Section 1.3 states "The following is a brief description of the four procedures". The implication is there are other, more detailed and final procedures to be used. If this is correct, please forward these more detailed procedures.	
Calculation of maximum ambient concentrations	Section 1.3	There is no stipulation whether maximum ambient concentrations must occur in Jefferson County. Ambient air outside Jefferson County is not excluded from the definition of ambient air for compliance purposes in the proposed regulations. The possible effect could be that Jefferson County point sources along the county line may face reduced allowable emissions based on impacts outside Jefferson County. Please explain why this is the case.	
Use of Max Receptor Concentrations	Sections 1.3.1-1.3.4	In conjunction with the new definition of ambient air, which includes land to which the general public does not have access, maximum receptor concentrations located inside industrial facilities will be used to calculate allowable emissions even though this air is regulated by OSHA and is not accessible to the public. Sources located downtown, for instance, might be regulated based on their projected impacts on roof tops of commercial buildings. Sources located in industrial areas may be regulated based on impacts on their neighbor's VOC storage tank. Industrial facility air is normally afforded OSHA PEL level concentrations and is protected by other stringent health-based regulations. The new TAC regulations may be thousands of times more stringent if applied at a receptor just beyond the fence line in another industrial facilities secured area.	Use the current EPA accepted and case law definition of ambient air. That is, only impose on air to which the general public has access.
Use of assumed conversion factors	Section 2	Conversion factors in Table 1 to go from one ambient concentration averaging time to another do not match EPA's conversion factors. Please explain how these were developed and reasoning behind it.	

Mysterious Tables	Section 2	What is the origin of Table 1 values and methodology?
Mysterious Tables #2	Section 3	What is the origin of Table 2 values and the methodology?
Arbitrary Input Parameters	Section 3.3.2	Define influential building height. Why can't this method be used if the influential building height is more than 100 feet?
Unclear Procedures	Section 3.3.7	States that, if the stack is not attached to a building, then a building height of 40% of the stack height shall be assumed. If this value is less than 100 feet, can Table 2 be used? Can a source assume a lower (worse case) stack height and a 100 foot building if the actual building height is 40% of the actual stack height?
Use of tiered benchmarks	Regulation 5.21 Section 2	The proposed regulation uses three layers of calculation of allowable emissions. First, each emission point's max receptor concentration is compared to a risk limit. Then, all permutations of emissions points and pollutants' individual max concentrations are summed to get a plant-wide risk level which is compared to a slightly higher allowed risk limit. Lastly all plant-wide risk levels for the county are summed and compared to a county-wide risk limit. Since summing of risk levels assumes max impacts occur at the same receptor at the same time, an unusually high cumulative risk level will be computed, making compliance with the risk limits highly conservative. Please explain the rationale on the additive effects of the risk levels and the methodology behind it. Increased more costly refined modeling will be required. Tracking of cumulative risk at thousands of receptors county-wide will be inevitable by numerous industries. Unrealistically low allowable emissions for each air toxic may result, since it is assumed risk levels for each are additive.
No human risk levels computed	Regulations 5.20, 5.21 and 5.22	Use of presumed benchmark risk levels rather than actual human exposure risk levels disconnects the relationship between emissions, atmospheric dispersion ability and population exposure normally found in risk based standards. Please explain rationale of this use of presumed benchmark risk levels. A potential effect of this is that without establishing the relationship of emissions of a specific air toxic to actual population exposure, there will be no consistent way to provide a focused risk reduction program to address hot spots, stringent emission controls may be inappropriately applied to industry groups having little impact on population exposure and no controls may happen on those source categories having the most human risk

Benchmark calculation methodology is arbitrary	Regulation 5.20 -Section 2, Regulation 5.22 Section 3	The APCD has provided a background document on how the proposed benchmarks and associated tabular calculation methods were developed. However, there is no explanation on why the method used was chosen that relates to human health risk, or why the tables for building & stack height factors based on use of SCREEN3 are reasonable (there is a lot of language about why the method is conservative, but nothing about whether the method is documented as a valid approach). Please provide this explanation. The background documents relay what Michigan did to come up with their approach of dividing a goal of 1×10^{-6} by the Unit Risk Factor for the substance. A suggested different approach would be to have offered an option to allow for human risk models using census data and meteorological dispersion in truly ambient air for comparison to the goal of 1×10^{-6} risk. Lastly, please explain the choice of risk levels in the tiered single point-single pollutant, plant-wide and county-wide system of 1, 3.7 and 7.5×10^{-6}. It seems that in order for the businesses to utilize the human risk model approach, they would have to go through the uncertain variance procedure. Is this the intent of the regulation?	
Unusually Low Modeling Compliance Concentrations	Sections 3.1, 4.1 and 5.1	The regulation directs one to calculate compliance with EA Levels in Regulation 5.21 which are calculated using Benchmarks from Regulation 5.20. The network of calculations required for Jefferson County's risk level results in the 1×10^{-6} risk determined by EPA's RfC values to be reduced by several orders of magnitude than the target 1×10^{-6} risk derived by meeting EPA's RfC for an individual emission point, plant or county-wide. For example, the RfC for benzene is 30 ug/m^3 over a 70 year lifetime exposure to achieve a 1×10^{-6} risk. However, going through the network of calculations proposed in the three regulations, the concentration allowed for benzene in Jefferson County becomes 0.13 ug/m^3, or 230 times more stringent, and applied over only a one year time period.	Reformat the regulations to simply use the RfC value as the 1×10^{-6} risk goal.
Proposed regulations assume there are allowable emissions	Section 2	The equations in Section 2 assume there allowable emissions with which to calculate maximum concentrations. This is not the case for a large number of emission points regulated by MACT technology standards and LDAR. Further, many if not most of the present APCD regulations do not contain a set allowable emissions rate for emission points, as they are technology based standards, or a floating allowable emissions rates based on throughputs. The effect on industry is confusion as to how to establish compliance with the proposed ambient BACs. Please provide some clarification on this.	

New regulations do not acknowledge existing toxic regulations	Sections 2 through 4	The APCD currently has 154 individual source category MACT standards adopted by reference covering 188 air toxic substances and Regulations 5.11 & 5.12 covering 785 air toxic substances. All major industry has had to demonstrate compliance with all of these provisions, which include emission limitations, control technology requirements, recordkeeping, monitoring, testing and reporting requirements as well as annual emissions reporting. The proposed Regulation 5.22 makes no mention of these requirements already in place and how a source may have already installed Regulation 5.22 T-BAC to comply with MACT, how they may have already complied with Regulation 5.11 or 5.12 by limiting air toxic emissions to an ASL or how they might have already demonstrated compliance with an ambient TAL. The effect on businesses is that the companies will have to navigate another layering of new requirements upon existing extensive air toxic compliance efforts. Please address the conflicts between an ASL and the benchmark allowables under the new regulation. The presumption from businesses is that both requirements will apply generating double the recordkeeping, monitoring, testing and reporting effort, and more than doubling of reporting under the new "excess emissions" definition. Please address the conflicts between the TAL allowable emission rate and benchmark emission limits. Please address the conflicts between the RACT/BACT and T-BAC determinations. For instance, does MACT equal T-BAC if the source wishes to pursue a variance?	
New regulations do not allow use of all EPA approved models for human risk	Sections 4 & 5	Why were the Tier 3 and Tier 4 models selected? What other models were reviewed when making this determination? The proposed regulation only cites 40 CFR 51 Appendix W as listing approved EPA models. This overlooks many EPA models approved for use on the EPA web site, and in risk assessment protocols issued by EPA. One example is the *Air Toxics Risk Assessment Reference Library Volume 2 - Facility-Specific Risk Assessment,* EPA publication EPA-453-K-04-001B. Since there only two point source models listed in Appendix W as opposed to approximately 10 other models from EPA for point sources, there is no approved option for assessing actual human risk in Jefferson County.	Add an option to address actual human risk using approved EPA models and include other approved EPA models such as listed on the EPA TTN website.
Hard to use	Regulations 5.20 & 5.21	The methodology for determining your risk levels is cumbersome. This is especially true for those facilities that are limited in staffing and resources. “Look up tables” should be readily available either on the APCD website or more clearly referenced in the regulation. The “look up tables” should be made available during the public review process so facilities can better access their impact and provide more detailed and helpful comments to the APCD.	
New regulations do not acknowledge EPA's residual risk program		EPA is already underway with its residual risk determinations for MACT source categories, many sources of which are located in Louisville. Since EPA's risk goal is 1 x 10^{-6} for each facility and APCD's risk goal is in the same range, has APCD tried to coordinate their efforts with EPA to have a uniform approach for Louisville Metro? The potential effect is double the information requests, double the risk analyses and double the number of emission limits, recordkeeping, monitoring testing and reporting that may be required to comply with both of these post-MACT programs.	

New regulations do not address actual Jefferson County human exposures	After all the work, and all the processing of permit applications that the new regulations will trigger, and potentially massive non-compliance and expenditures, the APCD will not be able to tell what the beneficial effects of the new regulations will be on public health in Jefferson County because the regulations do not address human exposure.	Continue existing air toxics regulatory program and document specific source-receptor approaches to resolving ambient concentrations in excess of desirable levels.
Regulations do not address the human health risks	The proposed regulations exempt or do not even address the primary sources of at least half of the Category 1 air toxics. The regulations will not address the primary sources of Category 1 air toxics for 1,3 butadiene, carbon tetrachloride, benzene, methylene chloride, chloroform, chloroprene, formaldehyde, perchloroethylene and vinyl chloride according to EPA's Great Lakes Air Toxics Study.	Address specific primary sources of Category 1 air toxics in a focused program rather than a shotgun approach aimed at non-primary sources for the Category 1 toxics listed.
Regulations present an unachievable goal	Based on some preliminary compliance calculations using Regulation 5.22 methods, very few emission points, let alone full facilities, will be able to meet the goals or standards in Regulation 5.21, and the county will not meet the county-wide risk goal or standard. A de minimis level should be established for modeling purposes. Those who emit very small/insignificant quantities should not be required to go through this labor-intensive process. Using a de minimis of 25 tons per pollutant could serve as a reasonable cutoff. The potential effect is that Louisville Metro will be faced with widespread non-compliance and may resort to selective enforcement while still not meeting the goals set. There could be widespread public disappointment at not meeting unrealistic goals. An additional concern is that new intelligent businesses will not locate in Jefferson County with that level of uncertainty about being able to comply with such standards.	Eliminate duplicative risk targets that assume synergistic additive effects, delete arithmetic summation of temporally and spacially different receptor concentrations contrary to established modeling protocols and establish a true human risk based approach based on actual demographics. Provide a de minimis level like the Kentucky regulations or those contained in APCD Regulations 5.11 & 5.12.

Greater Louisville Inc.
Environmental Affairs Committee
Comments on
STAR Program

Regulation 5.23

Regulation 5.23 Categories of Toxic Air Contaminants

► Please explain the inclusion of categorical entries such as "arsenic and arsenic compounds" in the Category 1 and Category 1A lists. The normal analytical method for metal compounds is atomic absorption (AA). This method is not capable to identify the compound or compounds that contain the metal as part of its structure. Please explain why this regulation treats all compounds that contain a metal as part of its structure as having the same degree of risk as the parent metal.

► Chromium is a special case in the West Jefferson County Risk Assessment. It is acknowledged by the study's authors that the "risk" associated with chromium is based on the assumption that the chromium metal was in the form of the hexavalent chromium ion. Atomic absorption which is the method of detection of chromium cannot distinguish between hexavalent chromium and the significantly less toxic trivalent chromium. Please explain the reasoning of including chromium and all of its compounds in the Category 1 list without more investigation by the Louisville Metro Air Pollution Control District into the sources of chromium emissions and the type of chromium emitted.

► The Toxic Release Inventory program does not require reports of chemical or chemical category releases unless the reporting site's annual usage of the TRI-listed chemical (or total of all members of a chemical category) exceeds specific thresholds. The threshold depends on the manner in which the facility "uses" the chemical. Facilities which "manufacture" or "process" listed chemicals or chemical categories must do so in amounts equal to or greater than 25,000 pounds per year. Facilities which "otherwise use" listed chemicals or chemical categories are subject to a 10,000 pound per year reporting threshold. Why is APCD requiring facilities in the Louisville Metro to consider all uses of listed chemicals or chemical categories without applying similar thresholds?

► The Toxic Release Inventory program recognizes that the information available to facilities is primarily provided by Material Safety Data Sheets (MSDSs). The preparation of MSDSs is governed by the OSHA hazard communication standard, 29 CFR 1910.1200. OSHA regulations do not require the disclosure of chemical constituents in the chemical composition section of MSDSs unless the chemical is present at concentrations of at least 1.0 weight percent for non-carcinogens and 0.1 weight percent for carcinogens. Facilities would only know of the presence of TACs if they are listed on MSDSs for the chemical substances they use. The TRI program does not require facilities to analyze raw materials, intermediates, and products to determine whether any

listed chemicals are present at levels less than required to be disclosed on an MSDS. Please explain if companies will be asked to breakdown this information even further from the MSDSs to report to APCD under this regulation.

► *De minimis* emissions should be exempted from the regulations. Please explain why de minimis levels were not included in the draft informal regulations.

► Please explain how APCD determined that companies are able to report TAC emissions by July 15, 2005 for all of calendar 2004, when facilities in the District's jurisdiction have not had any forewarning that they would need to collect appropriate data supporting these calculations until mid-September of the year, and the actual regulation may not be promulgated until December at the earliest.

The U.S. EPA commonly allows facilities at least a full calendar year's notice when adding chemicals or chemical categories to the Toxic Release Inventory list at 40 CFR Part 372. This practice accounts for the fact that the TRI reports due by July 1 of each year are for the estimated releases of listed chemicals during the entire preceding calendar year (the "reporting year".)

► The number of chemicals affected by this regulation has been inaccurately characterized. There are 18 entries in the list of "Category 1 Toxic Air Contaminants". Only 14 of these are individual chemicals. According to the on-line Combined Chemical Dictionary (Copyright 1982-2004 Chapman & Hall/CRC Press), there are at least 3,724 chemicals that contain arsenic as part of their chemical structure. (See table below.)

Category 1 TACs	Individually listed chemicals	14
("List of 18")	Arsenic and arsenic compounds	3,724
	Cadmium and cadmium compounds	911
	Chromium and chromium compounds	2,457
	Nickel and nickel compounds	2,829
	Minimum number of compounds in "list of 18"	**9,935**
Category 1A TACs	Individually listed chemicals	13
("List of 20")	Antimony and antimony compounds	1,624
	Cobalt and cobalt compounds	3,430
	Copper and copper compounds	2,306
	Diisocyanates	55
	Glycol ethers	30
	Lead compounds (not "lead and lead compounds – why???)	782
	Manganese and manganese compounds	2,929
	Minimum number of compounds in "List of 20"	**8,240**
Category 2 TACs	Individually listed chemicals	11
(EPA Urban Air Toxics not	Beryllium and beryllium compounds	196

already listed)	Coke oven emissions	???
	Diesel particulate matter	???
	Mercury and mercury compounds	2,681
	Polychlorinated biphenyls (PCBs)	17
	Polycyclic organic matter/PAHs	21
	Minimum number of compounds in "List of Urban Air Toxics"	**2,926**

► Section 5: This proposed regulation currently exempts from the definition of a TAC the emissions of natural gas, LPG and propane. This is reasonable but this exemption should be extended to also include exemption for the emissions from the combustion of these clean gaseous fuels. The emissions of toxic compounds from natural gas combustion are extremely low, however, many are present in extremely small concentrations. AP42 lists emissions factors for twenty different TACs for natural gas combustion. The proposed rule's lack of a de minmis emissions rate exemption, or exemptions specific to clean gas combustion, will require a large effort to calculate emissions and perform modeling for operations that are not real concerns. It is unlikely that modeling will show any problems with these emissions, and even if it did, there are few practical control techniques. Natural gas combustion is not a community health risk issue.

Category 3 TACs	Individually listed chemicals	
(CAA Hazardous Air	2,4-D salts and esters	???
Pollutants (HAPs) not	4,6-Dinitro-o-cresol salts	???
already listed)	All stereoisomers of 1,2,3,4,5,6-Hexachlorocyclohexane	???
(So-called “List of 188”)	Phosphorus and phosphorus compounds	36,626
	Cyanide and cyanide compounds	(?) 88
	Fine mineral fibers	???
	Radon and other radionuclides	???
	Selenium and selenium compounds	2,859